

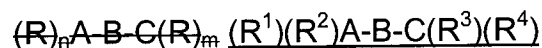
AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently amended) A process for the trimerisation of olefins ~~which process includes the step of comprising~~ contacting an olefinic feedstream with a catalyst system at a pressure above 100 kPa (1 barg), which catalyst system includes the combination of

[[-]] a ~~transition metal~~ chromium compound; and

[[-]] a heteroatomic ligand ~~described by~~ of the following general formula



where

A and C are ~~independently selected from the group consisting of phosphorus, arsenic, antimony, oxygen, bismuth, sulphur, selenium, and nitrogen;~~

B is a linking group between A and C and ~~is selected to exclude (CH₂)_xY(CH₂)_y, where Y is P(R⁶), N(R⁶), As(R⁶), Sb(R⁶) or S and x and y are individually 1-15 and wherein R⁶ is selected from the group consisting of hydrogen, a halogen, a nitro group, or a hydrocarbyl group and a substituted hydrocarbyl group~~ and;

~~the R-groups are the same or different, and each R is~~ R¹, R², R³ and R⁴ are independently selected from any homo or hetero hydrocarbyl group, and without any electron donating substituents on R; and

~~n and m is each determined by the respective valence and oxidation state of A and~~
C a hydrocarbyl group, a substituted hydrocarbyl group, a heterohydrocarbyl group

or a substituted heterohydrocarbyl group and two or more of R¹, R², R³ and R⁴ are aromatic or hetero-aromatic groups containing at least one non-polar substituent on the atom adjacent to the atom bound to A or C.

2-5. (Cancelled).

6. (Previously presented) The process as claimed in claim 1, wherein ethylene is contacted with the catalyst system at a pressure of more than 10 barg.

7. (Currently amended) The process as claimed in claim 1, wherein B is selected from the group consisting of an organic linking group containing a ~~hydrocarbyl~~ hydrocarbylene, a substituted hydrocarbyl hydrocarbylene, a heterohydrocarbyl heterohydrocarbylene and a substituted ~~heterohydrocarbyl~~ heterohydrocarbylene group; an inorganic linking group comprising a single atom linking spacer; and a group comprising methylene, dimethylmethylene, ~~1,2-ethane~~ 1,2-ethylene, 1,2-phenylene, ~~1,2-propane~~ 1,2-propylene, ~~1,2-catechol~~ 1,2-catecholate, ~~1,2-dimethylhydrazine~~ N(CH₃)-N-(CH₃)₂, -B(R⁵)-, -Si(R⁵)₂-, -P(R⁵)- ~~[[and]]~~ or -N(R⁵)₁, where R⁵ is hydrogen, a hydrocarbyl or substituted hydrocarbyl, a substituted heteroatom ~~[[and]]~~ or a halogen.

8. (Previously presented) The process as claimed in claim 1, wherein B is a single atom linking spacer.

9. (Previously presented) The process as claimed in claim 1, wherein B is -N(R⁵)-, wherein R⁵ is selected from the group consisting of hydrogen, alkyl, substituted alkyl, aryl, substituted aryl, aryloxy, substituted aryloxy, halogen, nitro, alkoxycarbonyl, carbonyloxy, alkoxy, aminocarbonyl, carbonylamino, dialkylamino, silyl groups or derivatives thereof, and an aryl group substituted with any of these substituents.

10-12. (Cancelled).

13. (Currently amended) The process as claimed in claim ~~[[12]]~~1, wherein R¹, R², R³ and R⁴ are independently selected from the group consisting of *o*-methylphenyl, *o*-ethylphenyl, *o*-isopropylphenyl, and *o*-*t*-butylphenyl, ~~phenyl, tolyl, biphenyl, and naphthyl group groups.~~

14. (Currently amended) The process as claimed in claim 1 wherein the ligand is selected from the ~~any one of a~~ group consisting of
(*o*-ethylphenyl)₂PN(methyl)P(*o*-ethylphenyl)₂,
(*o*-isopropylphenyl)₂PN(methyl)P(*o*-isopropylphenyl)₂,
(*o*-methylphenyl)₂PN(methyl)P(*o*-methylphenyl)₂,
(*o*-ethylphenyl)₂PN(methyl)P(*o*-ethylphenyl)(phenyl),
(*o*-ethylphenyl)₂PN(isopropyl)P(*o*-ethylphenyl)₂,
(*o*-isopropylphenyl)₂PN(isopropyl)P(*o*-isopropylphenyl)₂,
(*o*-methylphenyl)₂PN(isopropyl)P(*o*-methylphenyl)₂,
(*o*-*t*-butylphenyl)₂PN(methyl)P(*o*-*t*-butylphenyl)₂,

$(o\text{-}t\text{-butylphenyl})_2\text{PN}(\text{isopropyl})\text{P}(o\text{-}t\text{-butylphenyl})_2$,
 $(o\text{-ethylphenyl})_2\text{PN}(\text{pentyl})\text{P}(o\text{-ethylphenyl})_2$,
 $(o\text{-ethylphenyl})_2\text{PN}(\text{phenyl})\text{P}(o\text{-ethylphenyl})_2$,
 $(o\text{-ethylphenyl})_2\text{PN}(p\text{-methoxyphenyl})\text{P}(o\text{-ethylphenyl})_2$,
 $(o\text{-ethylphenyl})_2\text{PN}(\text{benzyl})\text{P}(o\text{-ethylphenyl})_2$,
 $(o\text{-ethylphenyl})_2\text{PN}(1\text{-cyclohexylethyl})\text{P}(o\text{-ethylphenyl})_2$,
 $(o\text{-ethylphenyl})_2\text{PN}(2\text{-methylcyclohexyl})\text{P}(o\text{-ethylphenyl})_2$,
 $(o\text{-ethylphenyl})_2\text{PN}(\text{cyclohexyl})\text{P}(o\text{-ethylphenyl})_2$,
 $(o\text{-ethylphenyl})_2\text{PN}(\text{allyl})\text{P}(o\text{-ethylphenyl})_2$,
 ~~$(3\text{-ethyl-2-thiopheneyl})_2\text{PN}(\text{methyl})\text{P}(3\text{-ethyl-2-thiopheneyl})_2$,~~
 $(2\text{-ethyl-3-thiopheneyl})_2\text{PN}(\text{methyl})\text{P}(2\text{-ethyl-3-thiopheneyl})_2$, and
 $(2\text{-ethyl-4-pyridyl})_2\text{PN}(\text{methyl})\text{P}(2\text{-ethyl-4-pyridyl})_2$.

15. (Currently amended) The process as claimed in claim 1, wherein the catalyst system is prepared by combining in any order the heteroatomic ligand with the ~~transition metal~~ chromium compound and an activator.

16. (Currently amended) The process as claimed in claim 15, which includes the step of generating a heteroatomic coordination complex *in situ* from the ~~transition-metal~~ chromium compound and the heteroatomic ligand.

17. (Currently amended) The process as claimed in claim 1, which process includes the step of adding a pre-formed coordination complex, prepared using the

heteroatomic ligand and the ~~transition metal~~ chromium compound, to a reaction mixture containing an activator.

18-19. (Cancelled).

20. (Currently amended) The process as claimed in claim 15, wherein the ~~transition metal~~ chromium compound is selected from an inorganic or organic salt, a coordination or organometallic complex.

21. (Currently amended) The process as claimed in claim 20, wherein the ~~transition metal~~ chromium compound is selected from the group consisting of chromium trichloride tris-tetrahydrofuran complex, (benzene)tricarbonyl chromium, chromium (III) octanoate, chromium (III) acetylacetonate, chromium hexacarbonyl, and chromium (III) 2-ethylhexanoate.

22. (Currently amended) The process as claimed in claim 21, wherein the ~~transition metal~~ chromium compound is selected from a complex selected from chromium (III) acetylacetonate and chromium (III) 2-ethylhexanoate.

23. (Currently amended) The process as claimed in claim 16, wherein the ~~transition metal~~ chromium compound and heteroatomic ligand are combined to provide a transition metal/ligand ratio from about 0.01:100 to 10 000:1.

24. (Currently amended) The process as claimed in claim 23, wherein the ~~transition metal~~ chromium compound and heteroatomic ligand are combined to provide a transition metal/ligand ratio from about 0.1:1 to 10:1.

25. (Currently amended) The process as claimed in claim 15, wherein the activator is selected from the group consisting of an organoaluminium compound, an organoboron compound, ~~an organic salt, such as methyllithium, [[and]]~~ methylmagnesium bromide, ~~an inorganic acid and salt, such as tetrafluoroboric acid~~ etherate, silver tetrafluoroborate and sodium hexafluoroantimonate.

26. (Original) The process as claimed in claim 25, wherein the activator is an alkylaluminumoxane.

27. (Currently amended) The process as claimed in claim 26, wherein the alkylaluminumoxane, is selected from the group ~~which consists~~ consisting of methylaluminumoxane (MAO), ethylaluminumoxane (EAO), ~~[[and]]~~ modified alkylaluminumoxanes (MMAO) ~~[[or]]~~ and mixtures thereof.

28. (Currently amended) The process as claimed in claim 26, wherein the ~~transition metal from the transition metal~~ chromium compound and the aluminumoxane are combined in proportions to provide an ~~Al/transition metal~~ Al/chromium ratio from about 1:1 to 10 000:1.

29. (Currently amended) The process as claimed in claim 28, wherein the ~~transition metal~~ chromium compound and the aluminoxane are combined in proportions to provide an ~~Al/transition metal~~ Al/chromium ratio from about 1:1 to 1000:1.

30. (Currently amended) The process as claimed in claim 29, wherein the ~~transition metal~~ chromium compound and the aluminoxane are combined in proportions to provide an ~~Al/transition metal~~ Al/chromium ratio from about 1:1 to 300:1.

31. (Currently amended) The process as claimed in claim 26, which includes the step of adding to the catalyst system a trialkylaluminium compound in ~~amounts~~ an amount of ~~between from~~ 0.01 to 100 mol per mol of alkylaluminoxane.

32. (Previously presented) The process as claimed in claim 1, which includes the step of mixing the components of the catalyst system at any temperature between -20°C and 250°C in the presence of an olefin.

33. (Original) The process as claimed in claim 32, wherein the temperature range is between 20°C and 100°C.

34. (Previously presented) The process as claimed in claim 1, wherein the process is carried out at temperatures in the range of 0-120 °C.

35. (Previously presented) The process as claimed in claim 1, wherein the process is carried out at a temperature range from 25-100°C.

36. (Previously presented) The process as claimed in claim 1, which includes the step of adding a polymerisation catalyst so that co-polymerisation of the olefin and trimerisation product occurs simultaneously leading to the incorporation of the trimerisation products into a copolymer.

37. (New) The process as claimed in claim 1, wherein the at least one non-polar substituent is selected from the group consisting of methyl, ethyl, propyl, propenyl, propynyl, butyl, isopropyl, isobutyl, *t*-butyl, pentyl, hexyl, cyclopentyl, 2-methylcyclohexyl, cyclohexyl, cyclopentadienyl, phenyl, bi-phenyl, naphthyl, tolyl, xylyl, mesityl, ethenyl, and benzyl.